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NASA-07920 (June 2004)

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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SECTION TABLE OF CONTENTS

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

SECTION 07920

SEALANTS AND CALKINGS

06/04

PART 1 GENERAL

1.1 REFERENCES
1.2 SUBMITTALS
1.2.1 Samples
1.3 QUALITY ASSURANCE
1.3.1 Compatibility with Substrate
1.3.2 Joint Tolerance
1.3.3 Mock-Up
1.4 DELIVERY, HANDLING, AND STORAGE
1.5 SPECIAL WARRANTY

PART 2 PRODUCTS

2.1 BACKUP MATERIAL
2.1.1 Flexible Cellular Backing
2.1.1.1 Sponge Rubber and Expanded Rubber
2.1.1.2 Vinyl Chloride Polymer
2.1.2 Synthetic Rubber
2.1.3 Polyethylene
2.2 BOND-PREVENTATIVE MATERIAL FOR SEALING COMPOUNDS
2.3 PRIMER-TO-SEALANT COMPOUNDS
2.4 SEALANTS
2.4.1 Oil- and Resin-Based
2.4.2 Elastomeric
2.4.3 Latex
2.4.4 Butyl Rubber Based
2.4.5 Silicon Rubber Base
2.5 SOLVENTS AND CLEANING AGENTS

PART 3 EXECUTION

3.1 EXAMINATION
3.2 PREPARATION
3.3 INSTALLATION
3.4 INSPECTION AND ACCEPTANCE PROVISIONS
3.5 CLEANING AND REPAIRING
3.6 PROTECTION

-- End of Section Table of Contents --

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SECTION 07920

SEALANTS AND CALKINGS

06/04

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NOTE: Delete, revise, or add to the text in this section to cover project requirements. Notes are for designer information and will not appear in the final project specification.

This section covers the sealing of structural building joints, and joints between elements within structures, with gun-applied calking and sealing compound, as required by the project.

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PART 1 GENERAL

1.1 REFERENCES

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NOTE: The following references should not be manually edited except to add new references. References not used in the text will automatically be deleted from this section of the project specification.

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The publications listed below form a part of this section to the extent referenced:

ASTM INTERNATIONAL (ASTM)

ASTM C 1085	(1991) Butyl Rubber-Based Solvent-Release Sealants
ASTM C 509	(2000) Standard Specification for Elastomeric Cellular Preformed Gasket and Sealing Material
ASTM C 570	(1995) Oil- and Resin-Base Caulking Compound for Building Construction
ASTM C 834	(2000e1) Latex Sealants
ASTM C 920	(2002) Standard Specification for Elastomeric Joint Sealants
ASTM D 1056	(2000) Standard Specification for Flexible Cellular Materials - Sponge or Expanded

Rubber

ASTM D 1565	(1981; R 1990) Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers (Open-Cell Foam)

1.2 SUBMITTALS

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NOTE: Review submittal description (SD) definitions in Section 01330, "Submittal Procedures," and edit the following list to reflect only the submittals required for the project. Submittals should be kept to the minimum required for adequate quality control. Include a columnar list of appropriate products and tests beneath each submittal description.
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The following shall be submitted in accordance with Section 01330, "Submittal Procedures," in sufficient detail to show full compliance with the specification:

SD-03 Product Data

Manufacturer's catalog data shall be submitted for the following items:

Flexible Cellular Backing
Bond-Preventative Material
Primer
Oil and Resin-Based Sealants
Elastomeric Sealants
Latex Sealants
Butyl Rubber Based Sealants
Silicon Rubber Based Sealants
Solvents and Cleaning Agents

SD-04 Samples

The Contractor shall submit the following samples:

Three cured color bead samples of each color and type of Sealing Compound to be used in the work, approximately 1/4-inch 6 millimeter wide by 1-inch 25 millimeter long.

Three Labels for each sample container of sealants including the following information; supplier, name of material, formula or specification number, lot number, color, date of manufacture, mixing instructions, life expectancy of the application, curing time, and shelf life.

Three Backup Material samples of each material, grade, rod size, and tube size to be used in the work, full size by 12-inches 300 millimeter long.

SD-07 Certificates

Certificates shall be submitted for the following items showing

conformance with referenced standards contained in this section.

Flexible Cellular Backing
Bond-Preventative Material
Primer
Solvents and Cleaning Agents

SD-08 Manufacturer's Instructions

Manufacturer's Installation instructions shall be submitted for the following in accordance with paragraph entitled, "Sealants," of this section.

Thermoplastic Sealing Compound
Two-Component Elastomeric Sealant

1.2.1 Samples

Provide [three] [_____] cured color bead samples of each color and type of Sealing Compound to be used in the work, approximately 1/4-inch wide by 1-inch 6 millimeter wide by 25 millimeter long.

Three Labels for each sample container of sealants shall include the following information; supplier, name of material, formula or specification number, lot number, color, date of manufacture, mixing instructions, life expectancy of the application, curing time, and shelf life.

[Three] [_____] Backup Material samples of each material, grade, rod size, and tube size to be used in the work, full size by 12-inches 300 millimeter long.

1.3 QUALITY ASSURANCE

1.3.1 Compatibility with Substrate

Sealants shall be verified for compatibility for use with joint substrates.

1.3.2 Joint Tolerance

Joint tolerances shall be in accordance with manufacturer's instructions.

1.3.3 Mock-Up

Sealants in mock-up [prepared by other trades] shall be installed by project personnel, using materials and techniques approved for use on the project.

1.4 DELIVERY, HANDLING, AND STORAGE

Materials shall be delivered in sealed containers that identify the product, manufacturer, color, directions for use, shelf life, and curing time at [____] degrees F C.

Materials shall be kept dry and shall be protected from freezing.

1.5 SPECIAL WARRANTY

Sealant joint shall be guaranteed against failure of sealant and against

water penetration through each sealed joint for [five] [_____] years.

PART 2 PRODUCTS

2.1 BACKUP MATERIAL

2.1.1 Flexible Cellular Backing

2.1.1.1 Sponge Rubber and Expanded Rubber

Sponge rubber and expanded rubber material shall be [round] [_____], ASTM D 1056, Type [1], [__], Class [A] [_____], Grade [5] [_____], rubber.

2.1.1.2 Vinyl Chloride Polymer

Vinyl chloride polymer material shall be [round] [_____], ASTM D 1565, Grade [V014] [_____], foam.

2.1.2 Synthetic Rubber

Synthetic rubber material shall be preformed [rods] [or] [tubes], ASTM C 509, Option [I] [_____], Type [I] [_____].

2.1.3 Polyethylene

Polyethylene material shall be [open cell] [or] [closed cell] [polyethylene] [polyurethane] as recommended by the sealant manufacturer.

2.2 BOND-PREVENTATIVE MATERIAL FOR SEALING COMPOUNDS

Bond-preventive material shall be [pressure sensitive tape,] as recommended by the sealant manufacturer to suit application.

2.3 PRIMER-TO-SEALANT COMPOUNDS

Primer shall be [non-staining type] [as recommended by sealant manufacturer] [_____] to suit application.

2.4 SEALANTS

Manufacturer's Installation instructions shall be submitted for Thermoplastic Sealing Compound and Two-Component Elastomeric Sealant covering procedures, suggested mixing equipment, storage requirements, and procedures for surface preparation.

2.4.1 Oil- and Resin-Based

Oil and Resin-Based Sealants shall be single component, color [as selected] [_____], conforming to ASTM C 570, Type [_____].

2.4.2 Elastomeric

Elastomeric Sealants shall be [single] [multi] component, color [as selected] [____], conforming to ASTM C 920, Type [_____], Grade [_____], Class [_____], use [_____]. [Base material shall be [urethane] [_____].]

2.4.3 Latex

Latex Sealants shall be single component, color [as selected] [_____],

conforming to ASTM C 834.

2.4.4 Butyl Rubber Based

Butyl Rubber Based Sealants shall be single component, solvent release, color [as selected] [_____], conforming to ASTM C 1085.

2.4.5 Silicon Rubber Base

Silicon Rubber Based Sealants shall be single component, solvent release, color [as selected] [_____], conforming to ASTM C 920, Non-sag, Type [_____], Grade [_____], Class [25] [_____].

2.5 SOLVENTS AND CLEANING AGENTS

Solvents, cleaning agents, and accessory materials shall be provided as recommended by the manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

Unsound substrates shall be repaired. Joint dimensions and surfaces receiving substrates shall be verified that they comply with the manufacturer's recommendations.

3.2 PREPARATION

Prepare [and prime] joints in accordance with manufacturer's instructions. Adjacent exposed surfaces shall be protected.

3.3 INSTALLATION

Backup material shall be installed with a [blunt] [rounded] [concave] tool.

Backup material shall be [33] [_____] percent oversize for closed cell and at least [50] [_____] percent oversize for open cell material, unless otherwise indicated.

Multi-component sealants shall be mixed according to manufacturer's instruction and applied to ensure proper width and depth. Three-sided adhesion shall be avoided.

Sealants shall be applied within recommended temperature and humidity conditions.

Sealants shall be installed free of air pockets, foreign embedded matter, ridges and sags.

Sealant shall be installed to cover the following conditions:

Openings .25 inch 6 millimeter and less between walls and partitions and adjacent casework, door frames, built in or surface mounted equipment and fixtures.

Perimeters of frames of doors, window, and access panels which adjoin exposed interior concrete and masonry surfaces.

Joints between interior masonry walls and partitions and columns,

pilasters, concrete walls, or exterior walls unless detailed otherwise.

Seats of metal thresholds for exterior doors.

Other interior locations where small voids between materials require filling for first class workmanship and painting.

3.4 INSPECTION AND ACCEPTANCE PROVISIONS

All work shall be inspected for proper installation. Calking and sealing shall be rejected for the following deficiencies:

Calking compound having a finished surface not conforming to specifications.

Sealing compound with color not matching the sample or surface not complying with specifications.

Sealing compound failing to adhere to side surfaces of joints.

3.5 CLEANING AND REPAIRING

Surfaces adjoining joint excess and smears resulting from installation shall be cleaned.

Defective work shall be removed and replaced with calking and sealing materials as indicated.

3.6 PROTECTION

Installed sealants shall be protected until cured.

-- End of Section --